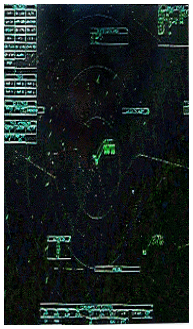
AD-6/AD-7

DRAFT

Wilson Felder
Terminal Business Service

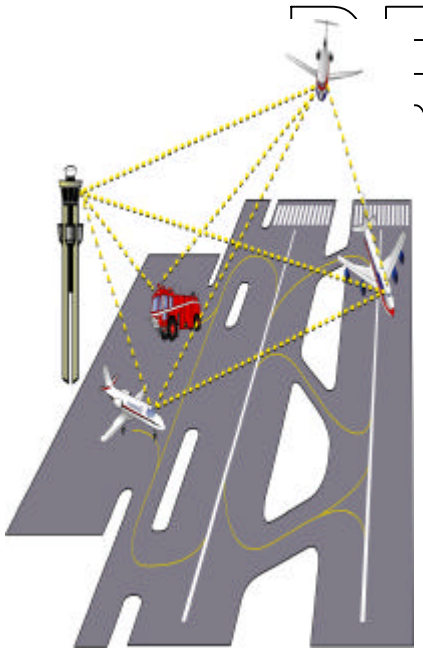
AD-6: Coordinate for Efficient Surface Movement

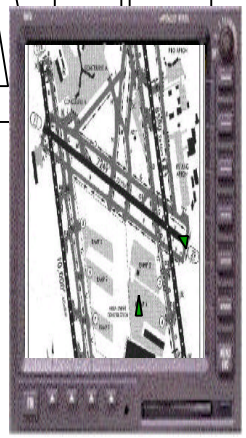
Reduce delay by the use of new tools to display and share scheduling and situation awareness information between service providers and users.



Enhanced ATC Airport Surface Surveillance

Final Approach & Runway Occupancy Awareness

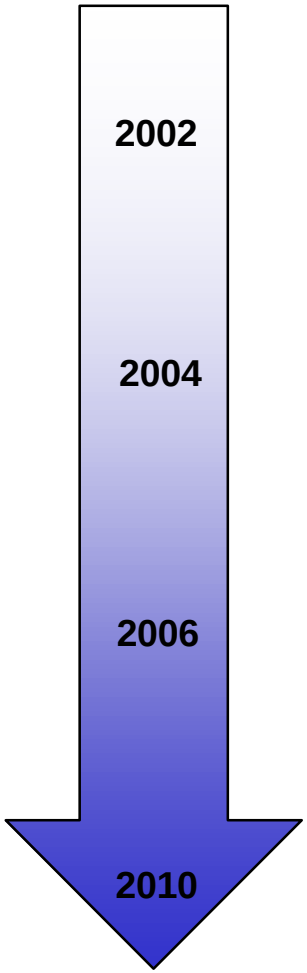




Airport Surface Situational Awareness

Improved planning, movement, and decision-making due to shared situational awareness of surface operations.

AD-6 Key Milestones



NASA demonstration in Memphis

SMS deployment decision

User and Ground Vehicles Equipped

Operational Surface Movement System*

** Planned Milestone*

Solutions/Initiatives

- **Surveillance data fusion**
  - **ADS-B and ASDE-X demo at Louisville in September 2002**
- **Extension of Collaborative Decision Making (CDM) methodology**
  - **Develop Surface Surveillance and Traffic Flow Management Data (CDM) Integration Plan**
  - **Final Interface Standards for Surface Surveillance System**
  - **Define Surface Management System (SMS) and its interfaces**
    - = **Trial at Memphis (December 2003)**
    - = **Independent analysis of SMS Trial (June 2004)**
  - **Incorporate Free-Flight Phase One (FFP1) Surface Movement Adviser (SMA) transitional capabilities**
  - **Deployment decision (December 2004)**
  - **Target date of December 2007 for an operational SMS**

Metrics

- **Reduced aggregate sum of interdeparture spacing times**
- **Reduced taxi time from touchdown to gate for equipped flights compared to average for all flights (same runway, concourse, and time slot)**
  - **Taxi times and departure throughput rates serve as proxies for improved traffic flow**
- **Reduced runway incursion incident rate**
- **Fewer taxi-clearance deviations**
- **Number of aircraft in departure queue should decline and be more evenly balanced (considering departure path and user preference)**
- **Reduced number, duration, and type of ATC communications for a specific equipped flight during ground operations compared to average for all flights over same path (same time slot)**

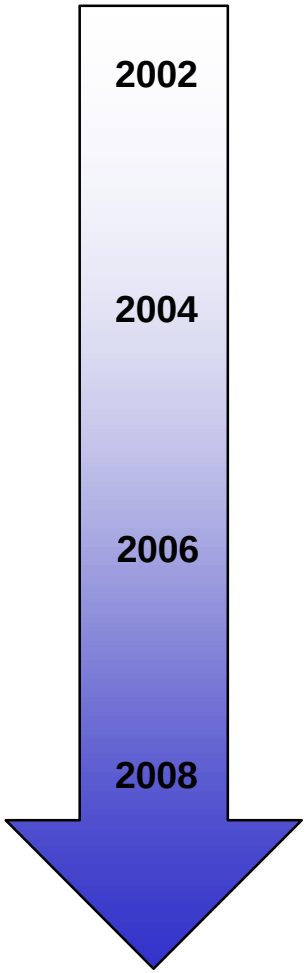
Top level metrics affected: cost per flight, delays, total flights, passengers and cargo

AD-7: Enhance Surface Situational Awareness

Improve surface movement efficiency through the use of cockpit displays of moving maps

Final Approach, Runway and Taxiway Occupancy Awareness

AD-7 Key Milestones



Complete Surface Operational Safety Assessment
Test Broadcast Services at SDF

Deliver Airport Surface Map Database for top 65 Airports

Certified Avionics (moving map)as Supplemental means of Navigation)*

IOC for Surface Navigation from Cockpit at Key Sites*

** Planned Milestone*

Solutions/Initiatives

- **Moving maps provide the same capability to to tower controllers, pilots, ramp controllers, and others involved with surface operations to receive and display the same surveillance data. These maps are proposed for 59 ASDE-X sites.**
- **FAA Surface Moving Map (SMM) activities:**
  - **FAA-approved Concept of Operation – March 2002**
  - **Complete keysite activities at Louisville/Sandiford Airport (SDF), including Surface Operational Safety Assessment (November 2002)**
  - **In-service evaluation and metrics collection – September 2001-September 2005**
- **Call-sign procedure limited implementation at Memphis Airport and SDF– September 2002**
- **Deliver airport surface map database for top 65 airports – February 2003**
- **Airline Certification and Installation Plan**
  - **United Parcel Service (UPS) Supplemental Type Certification (STC) for SMM in Boeing 757 – October 2002**

Metrics

- **Faster taxi times at night and under other reduced visibility conditions**
- **Average and excess gate times should decrease**
- **Reduced fuel burn during taxi**
  - **As calculated in the *Safe Flight-21 Cost Benefit Analysis* (May 2001), reduced taxi times could result in approximately $3.241B in cost savings over a 20-year lifecycle.**

Top level metrics affected: cost per flight, delays, total flights, passengers and cargo